



DISCO

Kiru · Kezuru · Migaku Technologies



Water-soluble Additive StayClean-F

Prevents pad corrosion during dicing



Pad corrosion prevention

For workpieces that have a long cut time, such as a workpiece with a small die size and a large diameter, corrosion may occur on the bonding pad due to prolonged exposure to the cutting water. By using StayClean-F, it prevents corrosion due to the formation of an ultra-thin barrier layer on the surface of the workpiece.

Particle adhesion prevention

By using the additive agent StayClean-F, it separates particles from the workpiece surface and prevents adhesion of particles that can not be removed with the spinner wash after dicing.

Low environmental load/Low running cost

StayClean-F can be used in the same environment* as normal dicing and does not include any regulated chemical, such as substances covered under the RoHS directive or PFOS. Furthermore, since StayClean-F can be used even at diluted concentrations of one part per thousand, and in particular at one part per ten thousand to prevent corrosion, the running costs are low.

*If the cutting water is being recirculated, contact your DISCO sales representative.

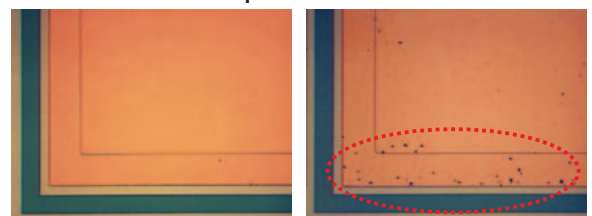
■ Pad corrosion prevention result



When using StayClean-F

Deionized water

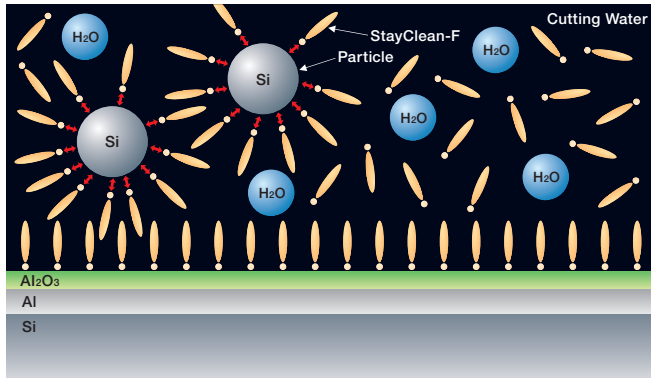
■ Particle adhesion prevention result



When using StayClean-F

Deionized water

Water-soluble Additive StayClean-F

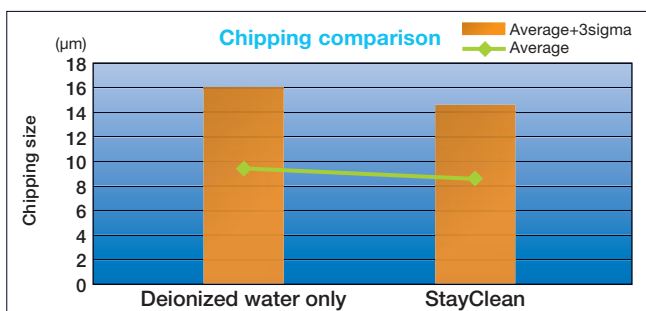
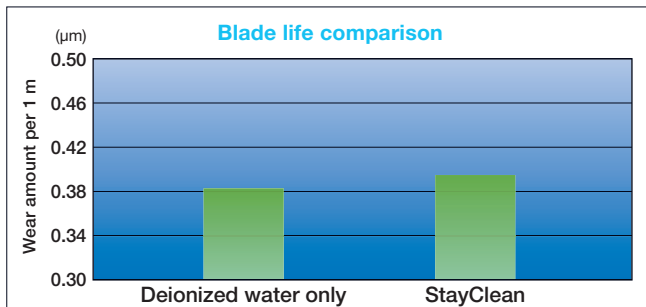


Mechanism

- [1] The components of StayClean-F form a barrier layer on the workpiece and this prevents pad corrosion and particle adhesion.
- [2] The components of StayClean-F are removed in the spinner wash process.

The same level of process results as when not used can be expected

Even if StayClean-F is added, the processing results are the same as for deionized water.



Workpiece: Si wafer
Blade: NBC-ZH
Spindle rpm: 40,000 (min⁻¹)
Feed speed: 60 mm/s

StayClean-F Specification

StayClean-F

Solution appearance	-	Transparent colorless liquid
Main ingredient	-	Water-soluble polymer macromolecule
pH (undiluted)	pH	4.7
Density (15 degrees C)	g/cm ³	1.03
Residue/decomposition (when diluted 1000 times)	mg/L	COD 32 (JIS K1002-17)
	mg/L	BOD 2.5 (JIS K0102-21)
Recommended dilution	times	1,000 - 10,000 (0.1 - 0.01 %)

StayClean Injector

Power supply, voltage	V	AC90 - 230	Single phase 50/60 Hz
Supply water temperature	deg C	20 - 25	
Supply water pressure	MPa	0.2 - 0.5	
Process flow rate	L/min	2 - 20	
Additive injection rate	%	0.1 - 0.01 (1,000 - 100 ppm)	
Machine dimensions (WxDxH)	mm	Injector 200 x 300 x 500 excluding projections	
		Bottle stocker 357 x 392 x 440 excluding projections	
Machine weight	kg	Injector Approximately 22 (When dry)	
		Bottle stocker Approximately 10 (When dry)	

Cautions before using StayClean-F

- Make sure to read the MSDS before using StayClean-F because it describes detailed care regarding its use.
- Do not use StayClean-F for any unintended use.

Cautions regarding the use of StayClean-F

- Take care not to touch your eyes or skin, wear appropriate protective equipment such as gloves and glasses when handling it.
- Avoid using it in conjunction with other chemical agents (in particular strong acids or strong alkalines).

Cautions regarding StayClean-F storage

- Avoid exposure to direct sunlight and store in a cool dark place. Do not place it in a freezer.
- Seal the container properly and then store it.
- With the container still sealed, the warranty period is one year from the date of manufacture.

StayClean Injector

Using the injector developed exclusively for StayClean, stable supply is possible even at diluted concentrations of one part per thousand or more.
(Conforms to the CE marking)

